

# DRAFT – FOR INTERVIEW DISCUSSION ONLY

For Examiner Luu Pham

Dated: April 11, 2011

Revised Claims and Remarks for US Pat Application 10/575,524

Cancel present claims and substitute the following new claims.

31. (New) A method of avoiding improper machine activation of a multi-axis machine tool by machine control parameters read into the multi-axis machine tool from a computer system that generates the machine control parameters for the multi-axis machine tool, comprising:

assigning a sender encryption key, a sender decryption key, and a sender identification to said computer system that generates the machine control parameters, said sender encryption key being different from said sender decryption key;

assigning a machine tool encryption key and a machine tool decryption key to said multi-axis machine tool, said machine tool decryption key being different from said machine tool encryption key;

providing a data processing unit and a memory, or an encryption module, to be read via a reader in said computer system for generating machine control parameters for said multi axis machine tool;

activating the data processing unit and the memory, or the encryption module, of said computer system to generate machine control parameters for said multi axis machine tool;

encrypting the machine control parameters generated to activate said multi-axis machine tool using said sender decryption key to obtain first-encrypted machine control parameters ,

adding said sender identification to the first-encrypted machine control parameters;

encrypting the first-encrypted machine control parameters including said

DRAFT – FOR INTERVIEW DISCUSSION ONLY

added sender identification using said machine tool encryption key to obtain second-encrypted machine control parameters;

providing an improper-activation safety module in said multi-axis machine tool to receive the second encrypted machine control parameters from the computer system;

when the second-encrypted machine control parameters are received in said multi-axis machine tool, decrypting the second-encrypted machine control parameters using said machine tool decryption key to obtain first-decrypted machine control parameters using said improper-activation safety module in the multi-axis machine tool, wherein decrypting the second-encrypted machine control parameters in said machine tool with the decryption key verifies that the machine control parameters were actually generated for the machine tool;

reading the sender identification from the first-decrypted machine control parameters in said improper activation safety module in the multi-axis machine tool;

authenticating the computer system for generating the machine control parameters for the multi-axis machine using said sender identification and a suitability of said sender encryption key for further decrypting the first-decrypted machine control parameters in said improper-activation safety module in the multi-axis machine tool, wherein authenticating the computer system for generating the machine control parameters for the multi-axis machine tool verifies that the computer system for generating the machine control parameters for the multi-axis machine tool is actually suitable and authorized to generate the machine control parameters for the multi-axis machine tool; and

when the computer system for generating the machine control parameters for the multi-axis machine tool is authenticated, decrypting the first-decrypted machine control parameters using said sender encryption key to obtain the machine control parameters using said improper-activation safety module in the multi-axis machine tool.

DRAFT – FOR INTERVIEW DISCUSSION ONLY

29. (New) A method for avoiding improper machine activation in a computer control system, the computer control system having a multi-axis machine tool having an improper-activation safety module and a computer system for generating the machine control parameters for the multi-axis machine tool, said system for generating the machine control parameters generating machine control parameters to activate the multi-axis machine tool, said system for generating the machine control parameters having a memory or an encryption module allowed to be read out via a reader in which a sender decryption key and a sender identification and a machine tool encryption key for said multi-axis machine tool are stored, and the multi-axis machine tool having a memory or a decryption module allowed to be read out via a reader in which a machine tool decryption key, a sender encryption key and a sender identification are stored, the method comprising:

encrypting the machine control parameters using said sender decryption key to obtain first-encrypted machine control parameters,

adding said sender identification to the first-encrypted machine control parameters,

encrypting the first-encrypted machine control parameters including said added sender identification using said machine tool encryption key to obtain second-encrypted machine control parameters, and

generating a data carrier or an electronic carrier signal with the second-encrypted machine control parameters for reading into the the multi-axis machine tool,

using the data processing unit and the memory of said computer system for generating machine control parameters for said multi axis machine tool.

30. (New) A method for avoiding improper machine activation in a computer control system, the computer control system having a multi-axis machine tool having an improper-activation safety module and a computer system for generating the machine control parameters for the multi-axis machine tool, said computer system for generating the machine control parameters generating machine control parameters to activate the multi-axis machine tool, said system for generating the machine control parameters having a memory or an encryption module allowed to be read out via a reader in which a sender decryption key and a sender identification and a machine tool encryption key for said multi-axis machine tool are stored, and the multi-axis machine tool having a memory or a decryption module allowed to be read out via a reader in which a machine tool decryption key, a sender encryption key and a sender identification are stored, the method comprising:

reading in asymmetrically-encrypted machine control parameters from a data carrier or via an electronic carrier signal generated by said computer system for generating the machine control parameters using an improper-activation safety module for reading in said machine control parameters in the multi-axis machine tool;

decrypting the encrypted machine control parameters using said machine tool decryption key to obtain first-decrypted machine control parameters in the improper-activation safety module of the multi-axis machine tool;

reading the sender identification from the first-decrypted machine control parameters in the improper-activation safety module of the multi-axis machine tool;

determining if the computer system for generating the machine control parameters for the multi-axis machine tool is authorized to generate the machine control parameters for the multi-axis machine tool based on the sender identification in the improper-activation safety module of the multi-axis machine tool; and, if so,

DRAFT – FOR INTERVIEW DISCUSSION ONLY

decrypting the first-decrypted machine control parameters using the sender encryption key to obtain the machine control parameters in the improper-activation safety module of the multi-axis machine tool.